100200681-1   Patent

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re Application of:

    Michael D. Oldham

Application No: 10/602,444

Filed: June 24, 2003

For: INTERMEDIATE PACKETIZING
        OF VOICE DATA FOR
        COMMUNICATION BETWEEN
        CIRCUIT-SWITCHED NETWORK
        NODES

Examiner: Knowlin, Thjuan

Group Art Unit: 2614

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail with sufficient postage in an envelope addressed to MAIL STOP AMENDMENT, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313 on

Cpril 24, 2007
Date of Deposit

William D Davis
William D. Davis

MAIL STOP AMENDMENT
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

DECLARATION UNDER 37 C.F.R. §1.131

    We, MICHAEL D. OLDHAM and CHRISTOPHER C. JONES, hereby declare as follows:

1.   We are co-inventors of the subject matter in the above-referenced application as claimed.

2.   At the time of conception and actual reduction to practice of the invention we were employees of Hewlett-Packard Company, which has its corporate offices in Palo Alto, California.

3.   In a laboratory located in Cupertino, California ("Laboratory") we constructed and tested a prototype of the claimed invention. The prototype routed voice communications between at least one remote originating node (caller) and one remote answering node (agent) as claimed in the application. The construction and testing of the working prototype occurred before August 16, 2002 ("Priority Date") - the earliest claimed priority date of cited nonprovisional application no. 10/326,360.

Docket No: 100200681-1
Application No: 10/602,444

4. Hewlett-Packard Company encourages employees to document inventions, concepts, research, and other matters to laboratory notebooks as part of their standard business practices. Shortly after constructing the working prototype and prior to the Priority Date, we provided documentation of our invention to our employer in the form of an "Invention Disclosure." An excerpt of the materials submitted for the Invention Disclosure, with dates redacted, is attached.

5. After the working prototype was constructed and prior to the Priority Date, we conducted a further series of stress tests at the Laboratory on the prototype to facilitate scaling the working prototype to handle multiple agents and multiple callers.

   a) Inventor Christopher Jones created entries at page 131 of a laboratory notebook relating to the stress tests. A copy of page 131 of this notebook, with dates redacted, is attached.

   b) Results of the stress tests for various combinations of agents and callers were also documented in a worksheet. A copy of the worksheet tabulating the test results, with dates redacted, is attached.

6. The initial construction and testing of the prototype described in item 3, as well as subsequent activities described in items 4 and 5 above, occurred prior to the August 16, 2002 filing date of provisional application no. 60/404,076 to which cited nonprovisional application no. 10/326,360 claims priority.

I/We hereby declare that all statements made herein of my/our own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine, imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Michael D. Oldham	2 4th April 2007
	Date

Christopher C. Jones	Date

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_____   _____
Michael D. Oldham   Date

_____   _____
Christopher C. Jones   4/23/2007
                                             Date

Customer Interaction Solutions

REMOTE AGENT / HOME AGENT INVESTIGATION

Author:	Kamesh Chidambaram
Creation Date:	
Last Updated:	
Document Ref:	
Version:	

hp
invent

Error! Reference source not found.
File Ref: RemoteAgentInvestigation   (v.)

Introduction   1

Solution Description

Currently Voice Over Internet Protocol call centers using Cisco IPCC do not have a supported solution for Home Agents or Remote Agents. This issue is a result of the Internet lacking a Quality of Service to voice traffic. Hewlett Packard Consulting have developed a solution to this problem by providing a software-only capability that adds value to the Cisco IPCC product. This solution does not require any TDM based hardware such as a PBX/ACD switch, or any specialized hardware at the Remote Agent's location. The Remote Agent simply uses any available telephone and an Internet connected PC or PDA running a Web Browser, such as Internet Explorer. This value-add solution provides a Web based controlling User Interface and a software service, which interfaces to IPCC using the open ICM, CCM and IPIVR interfaces. The remote agents can login for work either via their telephone, through an IPIVR script, or through a web page from their browser. Customer's calling into the call center have their information automatically loaded onto the specific agent's web page, so that the agent can get the "screen-pop" by refreshing his web page. The HP provided software runs on the Application/Web/Database server. This server should be placed in a DMZ so that it is accessible on port 80 for web hits from the remote agents.
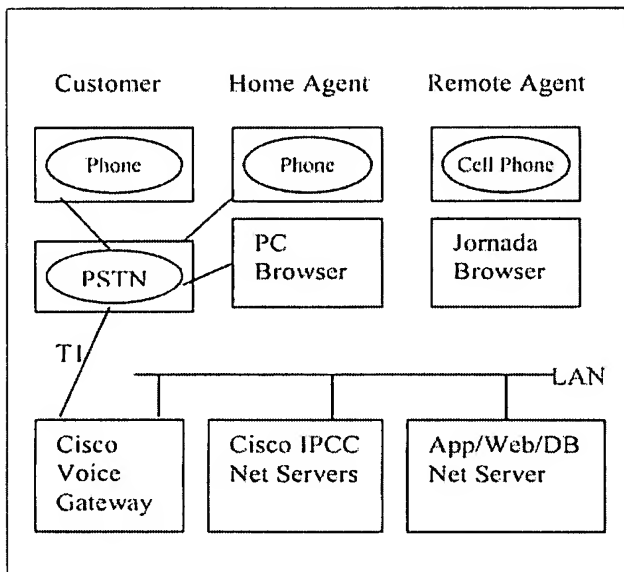
Platform Requirements

- Cisco Voice Gateway platform (such as)
  - ❑ Catalyst 4224
- IPCC Bundle platforms (3 servers)
  - ❑ Compaq 380 or HP LP1000R NetServer System
  - ❑ 1 GHz, 1 Gb RAM, 18 Gb disk
  - ❑ MS Windows NT 2000 Advanced Server SP2
  - ❑ MS Internet Information Server 5.0
  - ❑ MS SQL 7.0 Server DataBase
- HP Application/Web/Database server platform
  - ❑ HP LP1000R Net Server System
  - ❑ 1 GHz, 1 Gb RAM, 18 Gb disk
  - ❑ MS Windows NT 2000 Advanced Server SP2
  - ❑ MS Internet Information Server 5.0
  - ❑ MS SQL 7.0 Server DataBase

Capacity

The IPCC Bundle is designed for up to 100 agents. This solution allows those agents to be remote. Alternatively, some agents could be local and some could be remote, with the total still being limited to 100 concurrently logged in agents.

Key Benefits

- This solution is completely integrated with ICM so that all the Statistics and Reporting work the same between Remote and Local agents.
- Remote agents can be assigned skills in exactly the same way as local agents. Sophisticated Skills based routing scripts all work fine.

Limitations

- Calls trombone in and out of the call center. Therefore twice as many trunks are needed as customer calls.
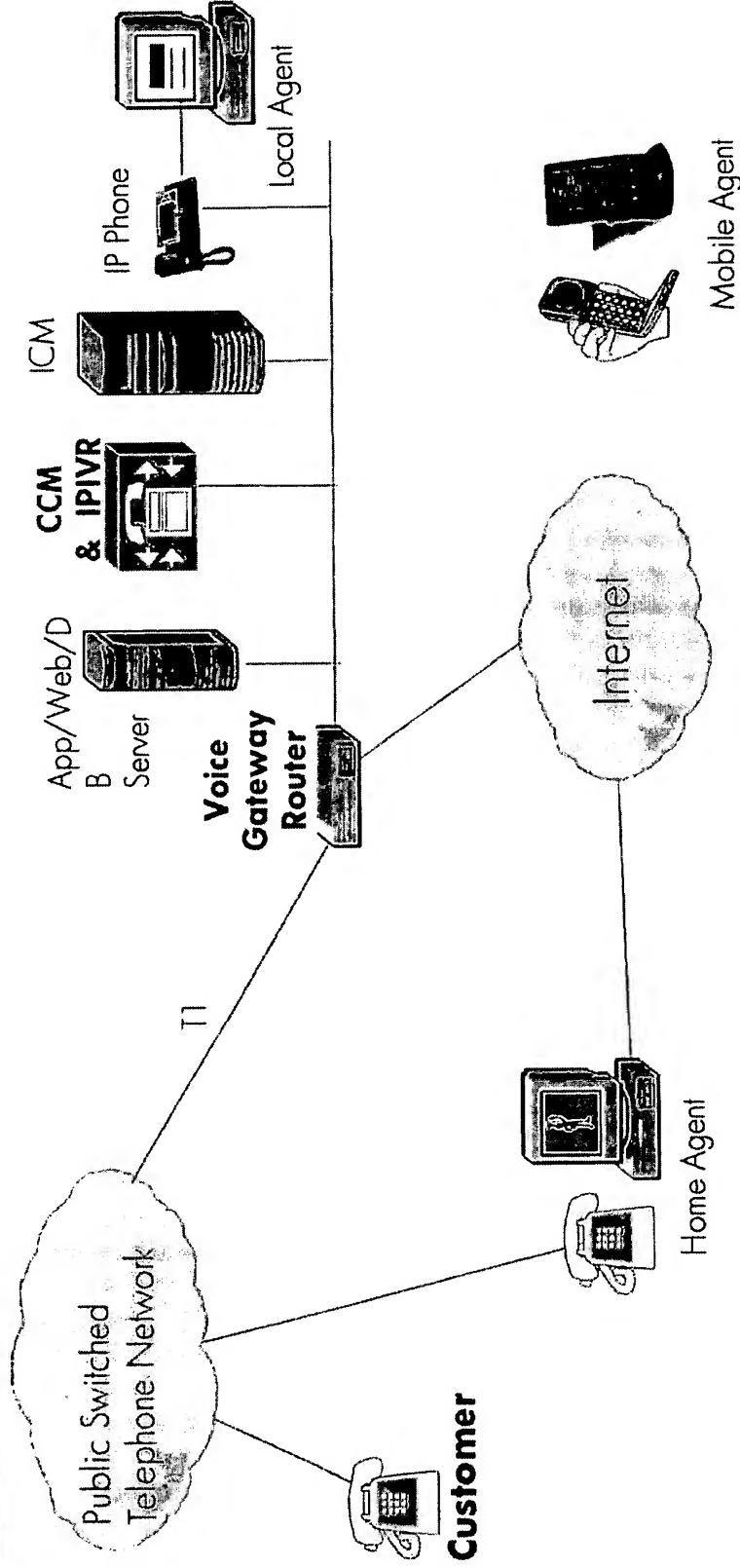
Schedule Estimates

- RAD Demo Cycle 1: 11/15/2001
- Production version – 3 engineer months after signed Purchase Order.

Resources

- HP Consulting has trained technology experts in Cisco telephony products.
- HPC CIS lab has multiple working hardware platforms of IPCC, ICM and CCM in its lab for testing and for giving demonstrations.
- HPC CIS lab engineering team has experience building value-add solutions for call center products.

HP Consulting CRM - CIS

Home/Mobile Agent with IPCC Telephony

App/Web/DB Server

CCM & IPIVR

ICM

IP Phone

Local Agent

Voice Gateway Router

T1

Public Switched Telephone Network

Customer

Internet

Home Agent

Mobile Agent

Scenario: Customer calls into Call Center. Based on skills required and Longest Available Agent, either a Local Agent, Home Agent or Mobile Agent is selected to answer the call. The selected agent receives the "screen-pop" of customer specific information from their web browser. Statistics, Reporting, Configuration and Routing all occur as usual from IPCC.

hp invent

PROJECT NAME _____   NOTEBOOK NO. _____

Friday ████████   Openview Meeting

Praveen Hegde, GT, MO, JH, CJ,   Peter Frost, Art Harkin
Tom... Ft Collins

IPCC with CCM — Reliability & Quality

SA Agent Probe   I U M

OVO operations   +   Cisco Works
or OVIS (Internet Services)
OVW (Openview Windows)

Monday ████████

Patti Petry — WW Program Manager IPCC
Patti.Petry@hp.com
1-(410)- 715- 1353

Tuesday ████████

Mariann @ Nursing Home

Project Meeting

Thursday ████████

Remote Agent

Testing is now working better, by using a different put.

16 hours   4 agents   3,200@ calls

ipcc2 — Remote Agents   geohplabpg1b- Call Manager
          icm — cis1000r9   test machine — vcckest
Server table,   cti part table

Star-team — source code

Friday ████████

447-1389
Jim — Cathleen Freyne — Outbound Dialer
— correct material — can't get PSA signed

SIGNATURE _____   DATE ____ 20 ____
READ AND UNDERSTOOD _____   DATE ____ 20 ____

Hi All,

Following is the summary of regression test results for Remote Agent from ███████████
███ – 2 agents and 2 callers
███ – 4 agents and 4 callers
███ – 4 agents and 4 callers

Date	Total Calls	Passed	Failed	LostAgent	Continuous-Agent Failure
███	1802	1766 (98%)	37 (2.1%)	None	None
	3324	3205 (96.4%)	122 (3.7%)	4	0
	1179	1046 (88.7 %)	133 (11.3%)	2	2

Note: On ███████ we had a clash with the phones with the Outbound Dialer team, therefore we lost 2 callers whose phones got BUSY to make further calls. However, the test continued with 2 callers and 4 agents.

We have always had two very distinct major problems:
- Agent is lost and cannot receive further calls
- Agent continuously fails.

Our fix broadcast prior to this summary clearly fixed the second error in most of the cases, which allowed us to have better run results. However, we still need to address these failures since it works most of the times and not all.

On ████████ we lost all agents.

On ████████ we lost 2 agents and the other 2 had continuous failures, which started off as <b312f> errors, where the caller hears a busy signal and then <37> failures, which are "Problem connecting" errors on the Remote Agent side.

We are investigating a run with CM version ███ which is supposed to have a fix for the Connect problem. However, our major concern now is to recover lost Agents, and ensure Agents do not fail continuously.

Angira

		███		███		███	
		CallerAgent	Percent	CallerAgent	Percent	CallerAgent	Percent
T1	<129>	4	0.2%	2	0.1%	4	0.3%
T2.1	<12f>	7	0.4%	34	1.0%	28	2.4%
T2.2	<12b>	0	0.0%	0	0.0%	0	0.0%
T2.3	<37>	0	0.0%	1	0.0%	14	1.2%
T3.1	<712b>	0	0.0%	0	0.0%	0	0.0%
T3.2	<b312b>	3	0.2%	6	0.2%	16	1.4%
T3.3	<712f>	0	0.0%	0	0.0%	0	0.0%
T3.4	<b312f>	8	0.4%	15	0.5%	38	3.2%
T4.1	<7037>	0	0.0%	1	0.0%	0	0.0%
T4.2	<b3037>	13	0.7%	24	0.7%	21	1.8%
T4.3	<b300f>	1	0.1%	15	0.5%	12	1.0%
T5	<f>	0	0.0%	20	0.6%	0	0.0%
T6		1	0.1%	3	0.1%	0	0.0%
UNKWN				1	0.0%		
	Total Errors	37	2.1%	122	3.7%	133	11.3%
	Passed	1766	98.0%	3205	96.4%	1046	88.7%

	Total Calls	1802	100.0%	3324	100.0%	1179	100.0%
	Test run	17h 20m		16h 30m		9 h 04 m	
LostAgent		None		Time	After	Time	After
71235				8:25:46	Pass-F2		Fail-F7
71237				8:27:41	b300f-F3		Fail-F8
72171				6:56:16	b312b-F1	2:13:39	b312f-F6
72176				8:34:42	b300f-F4	2:12:47	b312f-F5
LostCaller							
72843							
78752						19:05:03	OB-Call 383
78754							
78755						22:21:16	OB-Call 789